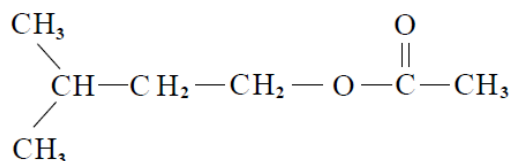


Crystal ball questions on Level 3 Esters

All of the following questions have not (as yet!) appeared in the NCEA Level 3 Exams

1) The molecule represented by the structural formula below is the alarm pheromone produced by honey bees: Draw and name 4 esters isomers of this molecule



2) The diagram below is an expanded structural diagram of a triglyceride molecule.

i) write the condensed structural formula of this molecule

ii) write the molecular formula of this molecule

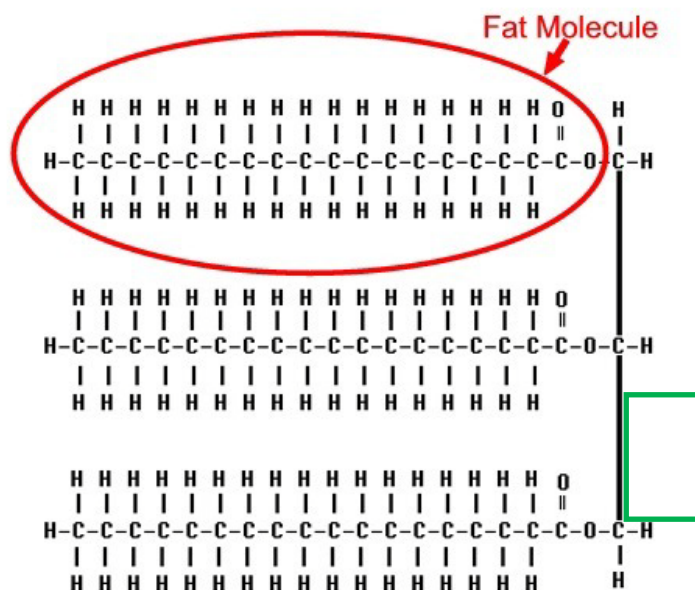
iii) draw a square around an ester group

iv) write the products of this reaction of this triglyceride with NaOH

v) write the products of the reaction of this triglyceride with dilute HCl

vi) describe how to make a soap using this triglyceride molecule

Triglyceride Molecule



3) A triglyceride found in cocoa butter is made up of the following three molecules

stearic acid	oleic acid	palmitic acid
$\text{H}_3\text{C} - [\text{CH}_2]_{16} - \text{C}(=\text{O})\text{OH}$	$\text{CH}_3(\text{CH}_2)_7\text{CH}=\text{CH}(\text{CH}_2)_7\text{COOH}$	$\text{CH}_3(\text{CH}_2)_{14}\text{CO}_2\text{H}$

i) Draw the expanded structural formula of the triglyceride

ii) Compare and contrast hydrolysis reactions of this triglyceride in acidic and basic conditions

iii) describe the observations of the reaction of this triglyceride with bromine water

iv) describe the observations of the reaction of this triglyceride with an oxidising agent (named example in your answer)